

REMARKS

Applicants respectfully request reconsideration of the application in view of the remarks below. Claims 1 through 32 are currently pending, of which claims 1, 2, 3, and 18 are independent claims.

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 5,717,510 to Ishikawa et al. Claims 1-3, 6-9, 12, 13, 15, 18, 21-24, 27, 28, and 30 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 5,887,105 to Bhagavatula et al. Claims 4, 14, 17, 19, 29, and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhagavatula in view of U.S. Patent 6,243,181 B1 to Golovchenko et al. Claims 5 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhagavatula in view of U.S. Patent 6,005,702 to Suzuki et al. Claims 10, 11, 25, and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhagavatula. Claims 16 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhagavatula in view of Ishikawa.

Each of these rejections is traversed for the reasons below.

The Claims are Patentable over Ishikawa

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ishikawa. This rejection is traversed for the following reasons below.

Unlike independent claim 1, which recites “a first pair of adjacent sections from the plurality of sections and a second pair of adjacent sections from the plurality of sections, the first pair of adjacent sections being mutually exclusive from the second pair of adjacent sections,” Ishikawa merely discloses a single pair of dispersion correcting fibers. Fig. 42 referenced by the Examiner includes only a single correcting fiber at the transmitter (dispersion compensator 112 with $D > 0$ in Fig. 42(a) or $D < 0$ in Fig. 42(b)) and a single correcting fiber at the receiver (dispersion compensator 112 with $D < 0$ in Fig. 42(a) or $D > 0$ in Fig. 42(b)) with a transmission fiber 102 in between (col. 21, lines 35-38). No configuration exists in which those three elements (two dispersion compensators of opposite sign 112 and transmission fiber 102 in Fig. 42) can form two mutually exclusive (i.e., non-overlapping) pairs of adjacent sections of opposite sign. Dispersion compensator 112 (at the transmitter) plus the transmission fiber 102 is not mutually exclusive of dispersion compensator 112 (at the receiver) plus the transmission

fiber 102 because both pairs share the common transmission fiber 102. Thus, Ishikawa fails to disclose a first and second pair of mutually exclusive adjacent sections from the plurality of sections.

Furthermore, unlike claim 1 which recites, “a plurality of sections having dispersion of opposite sign, . . . no amplifier being disposed between a first pair of adjacent sections from the plurality of sections and a second pair of adjacent sections from the plurality of sections,” Ishikawa does not disclose a first and second pair of adjacent sections having dispersion of opposite sign. Fig. 43, for example, discloses the use of additional dispersion compensators, but fails to disclose that the additional dispersion compensators have opposite sign. Moreover, Ishikawa discloses amplifiers disposed between the additional dispersion compensators (EDFA 104 in Fig. 43, for example). Thus, independent claim 1 is patentable over Ishikawa because Ishikawa fails to disclose all of the features of the claimed invention.

Independent claim 2 includes similar recitations, and therefore Ishikawa does not disclose the invention claimed in claim 2. Thus, independent claim 2 is patentable over Ishikawa.

The Claims are Patentable over Bhagavatula

Claims 1-3, 6-9, 12, 13, 15, 18, 21-24, 27, 28, and 30 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Bhagavatula. This rejection is traversed for the following reason below.

Unlike independent claim 1, which recites “the pulses being launched at a wavelength at which the system has normal average dispersion,” Bhagavatula merely discloses a system with zero or nearly zero anomalous average dispersion. Bhagavatula defines positive and negative dispersion as follows: positive dispersion results in “shorter wavelength light travel[ing] faster than longer wavelength light” and negative dispersion results in “longer wavelength light travel[ing] faster than shorter wavelength light” (col. 2, lines 48-51). Thus, positive dispersion as used by Bhagavatula is anomalous and negative dispersion is normal. Bhagavatula teaches that the individual waveguide fiber sub-length dispersions and lengths must be chosen so that the average dispersion is within a “preselected range” (col. 4, lines 15-18) and that the range may have complete or partial “cancellation of positive by negative dispersion” (col. 4, lines 42-54). Because anomalous dispersion here is cancelled by normal dispersion, the resulting average

dispersion may be zero (complete cancellation) or anomalous (partial cancellation), but not normal. Therefore, average dispersion “at or near zero” (col. 3, line 17) disclosed by Bhagavatula does not disclose normal average dispersion. Thus, independent claim 1 is patentable over Bhagavatula because Bhagavatula fails to disclose all of the features of the claimed invention.

Independent claim 2 includes a similar recitation, and therefore Bhagavatula does not disclose the invention claimed in claim 2. Thus, independent claim 2 is patentable over Bhagavatula.

Independent claim 3 includes a similar recitation, and therefore Bhagavatula does not disclose the invention claimed in claim 3. Thus, independent claim 3 is patentable over Bhagavatula. Claims 6-9, 12, 13, and 15 depend from independent claim 3. Because independent claim 3 is patentable over Bhagavatula as discussed above, its respective dependent claims 6-9, 12, 13, and 15 are patentable over Bhagavatula.

Independent claim 18 includes a similar recitation, and therefore Bhagavatula does not disclose the invention claimed in claim 18. Thus, independent claim 18 is patentable over Bhagavatula. Claims 21-24, 27, and 28 depend from independent claim 18. Because independent claim 18 is patentable over Bhagavatula as discussed above, its respective dependent claims 21-24, 27, and 28 are patentable over Bhagavatula.

The Claims are Patentable over Bhagavatula in view of Golovchenko

Claims 4, 14, 17, 19, 29, and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhagavatula in view of Golovchenko. This rejection is traversed for the following reason below.

Claims 4, 14, and 17 depend from independent claim 3; claims 19, 29, and 32 depend from independent claim 18. Because independent claims 3 and 18 are patentable over Bhagavatula as discussed above, their respective dependent claims 4, 14 and 17, and 19, 29 and 32, respectively, are patentable over Bhagavatula. Golovchenko fails to remedy the deficiencies of Bhagavatula discussed above. Thus, dependent claims 4, 14, 17, 19, 29, and 32 are patentable over Bhagavatula in view of Golovchenko.

The Claims are Patentable over Bhagavatula in view of Suzuki

Claims 5 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhagavatula in view of Suzuki. This rejection is traversed for the following reason below.

Claim 5 depends from independent claim 3; claim 20 depends from independent claim 18. Because independent claims 3 and 18 are patentable over Bhagavatula as discussed above, their respective dependent claims 5 and 20 are patentable over Bhagavatula. Suzuki fails to remedy the deficiencies of Bhagavatula discussed above. Thus, dependent claims 5 and 20 are patentable over Bhagavatula in view of Suzuki.

The Claims are Patentable over Bhagavatula

Claims 10, 11, 25, and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhagavatula. In particular, the Examiner has taken official notice that “dispersion managed systems using optical grating and an optical circulator is well known and widely used in the art.” This rejection is traversed for the following reasons below.

The Applicants respectfully disagree with the Examiner. In particular, the Applicants challenge the use of official notice and request that the Examiner support the finding with adequate documentary evidence. See M.P.E.P. 2144.03(C).

The Examiner stated that “dispersion managed systems using optical grating and an optical circulator is well known and widely used in the art” (emphasis added). The relevant question is not whether such systems are presently well known and widely used – the relevant question is whether such systems were well known at the time of the invention. The Applicants respectfully point out that the present application claims priority back to 1997. What may seem well known or widely used today is no way indicative of what was well known or widely used 10 years earlier. Thus, the Applicants respectfully request that this rejection be supported with adequate documentary evidence or withdrawn.

Furthermore, claim 11 depends from claim 10 and claim 10 depends from independent claim 3; claim 26 depends from claim 25 and claim 25 depends from independent claim 18. Because independent claims 3 and 18 are patentable over Bhagavatula as discussed above their respective dependent claims 10-11 and 25-26, respectively, are patentable over Bhagavatula.

The information the Examiner asserts as well known in the art fails to remedy the deficiencies of Bhagavatula discussed above. Thus, dependent claims 10-11 and 25-26 are patentable over Bhagavatula.

The Claims are Patentable over Bhagavatula in view of Ishikawa

Claims 16 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhagavatula in view of Ishikawa. This rejection is traversed for the following reason below.

Claim 16 depends from independent claim 3; claim 31 depends from independent claim 18. Because independent claims 3 and 18 are patentable over Bhagavatula as discussed above their respective dependent claims 16 and 31 are patentable over Bhagavatula. Ishikawa fails to remedy the deficiencies of Bhagavatula discussed above. Thus, dependent claims 5 and 20 are patentable over Bhagavatula in view of Ishikawa.

Conclusion

All rejections having been addressed, Applicants respectfully submit that the present application is in condition for allowance, and earnestly solicit a Notice of Allowance, which is believed to be in order. Should the Examiner have any questions regarding this communication, or the application in general, he is invited to telephone the undersigned at 703-456-8506.


The Director is hereby authorized to charge any appropriate fee under 37 C.F.R. §§ 1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

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Respectfully submitted,
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